

What is claimed is:

1. For a laser device capable of etching indicia on a workpiece, an improved indicia positioning apparatus, the improvement comprising:

a pair of opposing x-track members disposed along a first dimension:

5 a y-track member being movably mounted along a second dimension perpendicular to said x-track members, said y-track further being mounted between said x-track members and movable along said x-track members;

a shuttle capable of having the laser device being mounted thereon, said shuttle being movably mounted on the y-track member, wherein the laser device is positionable along the y-track member, and the y-track member is positionable along the x-track member, according to a
10 desired indicia location.

2. The indicia positioning apparatus of claim 1, further comprising:

an indicia location calculator capable of determining an optimal indicia location given the dimensions of the workpiece to which indicia is to be etched; and

15 a controller capable of placing said laser device adjacent said optimal indicia location, said controller being further capable of instructing said laser device to operate.

3. The indicia positioning apparatus of claim 1, further comprising a workpiece conveyor adapted to move a workpiece linearly along on a plane, said conveyor disposed adjacent said x-track members, such that the laser device may be placed adjacent to and aimed
20 perpendicularly to the plane of the workpiece conveyor.

4. The indicia positioning apparatus of claim 1, further comprising:

a first motor being in driving communication with said y-track member and capable of moving said y-track member along said first dimension;

a second motor being in driving communication with said shuttle and being capable of moving said shuttle along said second dimension.

5. A computerized method of imparting etched indicia to a planar workpiece, comprising the steps of:

5 providing a laser beam etcher capable of etching an image in the planar workpiece;
positioning said planar workpiece perpendicularly to the aim of said etcher;
calculating an optimal indicia location according to established parameters;
moving said laser beam etcher adjacent said optimal indicia location;
determining an optimal orientation for said image;
10 deriving orientation data from said optimal orientation;
transmitting said image data and said orientation data to said laser beam etcher; and
instructing said laser beam etcher to fire.

6. The computerized method of claim 5, wherein the orientation data and image data are transmitted to said laser beam etcher as separate data elements.

15 7. The computerized method of claim 5, wherein the orientation data is incorporated into said image data prior to transmission to said laser beam etcher.

8. A computerized method of imparting an indicia to a planar surface, comprising the steps of:

providing an etcher capable of etching an indicia in the planar workpiece media;
20 providing a subject of the planar workpiece media having a first edge and a second edge;
determining a desired indicia location on said workpiece, said location being at an intersection of a first and second inset line, the first and second inset lines being at an angle to each other, the first inset line being a specified distance from a first tangent line, said first

tangent line being tangent to said first edge, said second inset line being a specified distance from a second tangent line, said second tangent line being tangent to said second edge, and said second tangent line being a specified distance from said second tangent line;

determining a first offset distance from the first edge at which the intersection should be

5 located;

determining a second offset distance from the second edge at which the intersection should be located;

positioning said planar workpiece adjacent said etcher;

transmitting image data and orientation data to said etcher;

10 finding the first edge of said planar workpiece;

finding the second edge of said planar workpiece;

positioning said etcher adjacent the intersection;

imparting the indicia to the planar workpiece surface at the intersection.

9. The method of imparting an indicia of claim 8, where the step of positioning said
15 etcher adjacent the intersection comprises the steps of:

positioning said etcher at a point along said first dimension, at a distance from the first edge equal to the first offset distance;

positioning said etcher at a point along said second dimension, at a distance from the second edge equal to the second offset distance.

20 10. A computerized method of indicia placement on a planar surface, comprising the steps of:

providing a workpiece having a planar surface;

providing an indicia image;

obtaining the dimensions of the planar surface;
inputting an approximate desired indicia location and a desired orientation;
calculating an optimal indicia location on the planar surface according to the desired
indicia location;

5 effecting the movement of an indicia imparting device to the optimal indicia location on
the planar surface relative; and

imparting the indicia at the optimal indicia location on the planar surface.

11. The computerized method of claim 10, where the step of imparting the indicia
comprises the steps of placing a laser emitting device to be adjacent the planar surface and aimed
perpendicularly to said surface, and emitting light from the laser in a pattern to impart the indicia
10 image.

12. The computerized method of claim 9, where the step of emitting light from the
laser in a pattern to impart the indicia is effected by a picture-imparting laser.

13. The computerized method of claim 10, where the step of emitting light from the
15 laser in a pattern is effected according to a computerized image file.

14. A computerized method of imparting etched indicia to a planar workpiece,
comprising the steps of:

providing an etcher capable of etching an indicia in a planar workpiece media according
to orientation data received from a controller;

20 providing a subject of the planar workpiece media having a first edge and a second edge;
determining a desired indicia location on the workpiece, the location being at an intersection of a
first and second dimension, the first and second dimensions a specified distance from the first
edge and the second edge;

determining a first offset distance from the first edge at which the intersection should be located;

determining a second offset distance from the second edge at which the intersection should be located;

5 positioning the planar workpiece adjacent the etcher;
transmitting to the etcher indicia image data;
transmitting to the etcher indicia orientation data;
detecting the first edge of the planar workpiece;
detecting the second edge of the planar workpiece;
10 positioning the etcher adjacent the intersection; and
imparting the indicia to the planar workpiece surface at the intersection.

15. The method of claim 14, wherein the step of positioning the etcher adjacent the intersection comprises the steps of:

15 positioning the etcher at a point along the first dimension, at a distance from the first edge
equal to the first offset distance;
positioning the etcher at a point along the second dimension, at a distance from the
second edge equal to the second offset distance.

16. A computerized method of indicia placement on a planar surface, comprising the steps of:

20 providing a workpiece having a planar surface;
providing an indicia image;
obtaining the dimensions of the planar surface;
inputting an approximate desired indicia location and a desired orientation;

calculating an optimal indicia location on the planar surface according to the desired indicia location; and

imparting the indicia at the optimal indicia location on the planar surface.

17. The method of claim 16, wherein the step of imparting the indicia comprises the

5 steps of:

placing a laser emitting device adjacent the planar surface; and

emitting light from the laser in a pattern to impart the indicia image.

18. The method of claim 17, wherein the step of imparting the indicia further comprises the step of transmitting orientation data to the laser emitting device.

10 19. The method of claim 17, wherein the step of emitting light from the laser in a pattern to impart the indicia is effected using a picture-imparting laser.

20. The method of claim 17, wherein the step of emitting light from the laser in a pattern is effected according to a computerized image file.

15 21. The method of claim 20, wherein the computerized image file has been modified to incorporate data regarding desired orientation .

22. The method of claim 16, wherein the step of imparting the indicia comprises the steps of:

placing a laser emitting device adjacent the planar surface;

transmitting orientation data to the laser emitting device; and

20 emitting light from the laser in a pattern to impart the indicia image.

23. The method of claim 16, further comprising the step of receiving the workpiece at a fixed position in a workstation.

24. The method of claim 16, wherein the indicia comprises logo information.

25. The method of claim 16, wherein the indicia comprises text information.

26. The method of claim 25, wherein the indicia comprises window specification information.

27. The method of claim 25, wherein the indicia comprises NFRC ratings.

5 28. The method of claim 26, further comprising the steps of:
determining window specification data by testing the workpiece; and
transmitting said window specification data to an indicia imparter.

29. The indicia positioning apparatus of claim 1, wherein said indicia positioning apparatus is incorporated into a workpiece processing line.

10 30. The indicia positioning apparatus of claim 29, wherein said workpiece processing line is a glass processing line.

31. The indicia positioning apparatus of claim 29, wherein said workpiece processing line is a processing line for insulated glass assembly units.

15 32. The indicia positioning apparatus of claim 1, wherein said x-track members and y-track members are all positioned horizontally.

33. The indicia positioning apparatus of claim 32, wherein said indicia positioning apparatus is disposed over a glass cutting table at a distance adapted to provide for etching of a workpiece placed on said cutting table.

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